129:191543 **Nonaqueous** electrolyte **batteries** containing covalent bonded crystal alloys. Inamasu, Tokuo; Iguchi, Takaki (Yuasa Battery Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10208740 A2 19980807 Heisei, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-11115 19970124.

AB Claimed **batteries** use **anodes** from alloys contg. a covalent bonded crystal and Li. Preferably, the covalent bonded crystal is a Si single crystal. The **batteries** have good charging-discharging characteristics.

IT **211746-67-7P**
(**anodes** contg. covalent bonded crystal-Li alloys for **nonaq. batteries**)

RN 211746-67-7 HCA

CN Silicon alloy, base, Si 97,Li 2.7 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Si	97	7440-21-3
Li	2.7	7439-93-2

IC ICM H01M004-38

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 56

ST covalent bond crystal lithium alloy **anode**; **battery** lithium silicon single crystal

IT **Battery anodes**
(**anodes** contg. covalent bonded crystal-Li alloys for **nonaq. batteries**)

IT Secondary **batteries**
(lithium; **anodes** contg. covalent bonded crystal-Li alloys for **nonaq. batteries**)

IT 117219-39-3P **211746-67-7P** 211746-68-8P
(**anodes** contg. covalent bonded crystal-Li alloys for **nonaq. batteries**)

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127:265561 Secondary **nonaqueous** electrolyte **batteries**. Miyasaka, Tsutomu (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 09245836 A2 19970919 Heisei, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-51177 19960308.

AB The **batteries** use spinel type Li Mn oxide **cathode** active mass, **nonaq.** electrolyte and Li intercalating alloy based **anode** active mass; where the **cathode** active mass has a compn. LixMn2-aMa/cO4+b (M = metal ion, 0.1 <x .ltoreq.1.2, 0 .ltoreq.a <2, 1 .ltoreq.c .ltoreq.3, and 0 .ltoreq.b <0.3) in charge-discharge cycles and has a protection film, having no electron cond., at its interface with the electrolyte. The protection film may be Al2O3, TiO2, and/or ZrO2; M is selected from Zr, Nb, lanthanides, Na, K, Mg, Ca, or Cs; and the **anode** active mass is an alloy contg. Al, Mg, B, Sb, Bi, Si, Ge, Cu, Ti, Ga, and/or In. These **batteries** have high capacity.

IT **84723-38-6**
(**anodes** for secondary lithium **batteries** contg. spinel type lithium manganese oxide **cathodes** and **cathode** protection films)
RN 84723-38-6 HCA
CN Silicon alloy, base, Si 52,Li 48 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Si	52	7440-21-3
Li	48	7439-93-2

IC ICM H01M010-40
ICS H01M010-40; H01M004-02; H01M004-58
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST lithium **battery cathode** protection film; alumina protection film lithium **battery cathode**; titania protection film lithium **battery cathode**; zirconia protection film lithium **battery cathode** ; manganese lithium oxide **cathode** protection film
IT **Battery cathodes**
(compns. of **cathodes** and protection films for **cathodes** in secondary lithium **batteries**)
IT Secondary **batteries**
(secondary lithium **batteries** contg. **cathode** protection films)
IT 12008-29-6, Boron silicide (B6Si) 12338-02-2 22831-39-6, Magnesium silicide (Mg2Si) **84723-38-6** 120536-36-9 195967-34-1 195967-37-4
(**anodes** for secondary lithium **batteries** contg. spinel type lithium manganese oxide **cathodes** and **cathode** protection films)
IT 12190-79-3, Cobalt lithium oxide (CoLiO2) 113066-89-0, Cobalt lithium nickel oxide (Co0.2LiNi0.8O2)
(auxiliary active mass in lithium manganese oxide **cathodes** contg. protection films for secondary lithium **batteries**)
IT 189166-92-5, Cobalt lithium manganese oxide (Co0.05Li1.02Mn1.95O4) 189166-98-1, Chromium lithium manganese oxide (Cr0.05Li1.02Mn1.95O4) 195967-18-1, Iron lithium manganese oxide (Fe0.05Li1.02Mn1.95O4) 195967-22-7, Copper lithium manganese oxide (Cu0.05Li1.02Mn1.95O4) 195967-25-0, Aluminum lithium manganese oxide (Al0.05Li1.02Mn1.95O4) 195967-28-3, Lithium magnesium manganese oxide (Li1.02Mg0.05Mn1.95O4) 195967-30-7, Lithium manganese sodium oxide (Li1.02Mn1.95Na0.05O4) 195967-32-9, Lithium manganese neodymium oxide (Li1.02Mn1.95Nd0.05O4)
(compns. of **cathodes** and protection films for **cathodes** in secondary lithium **batteries**)
IT 1314-23-4, Zirconia, uses 1344-28-1, Alumina, uses 13463-67-7, Titanium oxide (TiO2), uses
(protection films for lithium manganese oxide **cathodes**

in secondary lithium **batteries**)

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122:295306 Secondary **nonaqueous batteries** with lithium intercalating silicon **anodes** and their manufacture. Sasaki, Tomio; Sakai, Tsugio; Tawara, Kensuke (Seiko Instr & Electronics, Japan; Seiko Electronic Components). Jpn. Kokai Tokkyo Koho JP 07029602 A2 19950131 Heisei, 9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1993-173313 19930713.

AB The **batteries** use LixSi (x .ltoreq.5) **anodes**, transition metal oxide **cathodes**, and Li+ conductive **nonaq**. electrolytes. The LixSi is preferably amorphous and the **cathodes** may be LiaMbLcO2, where M = transition metal, L = B and/or Si, 0 <a .ltoreq.1.15, 0.85 .ltoreq.(b + c) .ltoreq.1.3, and 0 .ltoreq.c. The **batteries** are prepd. by electrochem. intercalating Li in Si during the manuf. process or after the assembling of the **batteries**.

IT **163294-90-4**, Lithium silicide (Li0-5Si)
(lithium intercalating silicon **anodes** and their manuf. for **batteries**)

RN 163294-90-4 HCA
CN Lithium silicide (Li0-5Si) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Si	1	7440-21-3
Li	0 - 5	7439-93-2

IC ICM H01M010-40
ICS H01M004-02; H01M010-36
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST **battery** lithium silicide **anode**
IT **Batteries**, secondary
(lithium silicide/boron- or silicon-contg. cobalt lithium oxide)
IT **Anodes**
(**battery**, lithium intercalating silicon **anodes** and their manuf. for **batteries**)
IT 154471-92-8, Cobalt lithium borate oxide (Co0.9Li(BO3)0.1O1.7)
163219-55-4, Cobalt lithium oxide silicate (Co0.9LiO1.6(SiO4)0.1)
(**cathodes** for **batteries** with lithium intercalating silicon **anodes**)
IT 96-49-1, Ethylene carbonate
(electrolyte solvents for **batteries** with lithium intercalating silicon **anodes**)
IT **163294-90-4**, Lithium silicide (Li0-5Si)
(lithium intercalating silicon **anodes** and their manuf. for **batteries**)
IT 7440-21-3, Silicon, uses
(lithium intercalating silicon **anodes** and their manuf. for **batteries**)

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112:220375 **Nonaqueous** lithium alloy **battery**.
Furukawa, Nobuhiro; Yoshimura, Seiji; Takahashi, Masatoshi (Sanyo Electric Co., Ltd., Japan). Eur. Pat. Appl. EP 349675 A2 19900110, 48 pp. DESIGNATED STATES: R: CH, DE, FR, GB, LI, NL, SE. (English). CODEN: EPXXDW. APPLICATION: EP 1988-119035 19881115. PRIORITY: JP 1988-165724 19880701; JP 1988-165725 19880701; JP 1988-165726 19880701.

AB The **battery** includes an electrolyte of LiF3CSO3 and org. solvent mixt. of .gtoreq.2 high b.p. solvents and including .gtoreq.1 cyclic carbonate. The solvent mixt. comprises ethylene carbonate (EC), butylene carbonate, and DME; EC, .gamma.-butyrolactone, and DME; or propylene carbonate, sulfolane, and THF. The **battery cathode** is selected from oxides, sulfides, and halides. LiF3CSO3 is heated, dried, and dehydrated in a vacuum at 80-150.degree.. The electrolyte contains an inhibitor for inhibiting reaction between the **battery** can and the electrolyte. The inhibitor is selected from LiNO3, (EtO)3PO, (n-BuO)3PO, N,N,N',N'-tetramethyl ethylenediamine, etc.

IT **75418-59-6**
(**anodes**, **batteries** contg., electrolytes for)

RN 75418-59-6 HCA
CN Lithium alloy, base, Li,Si (9CI) (CA INDEX NAME)

Component	Component Registry Number
Li	7439-93-2
Si	7440-21-3

IC ICM H01M006-16
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST lithium **battery** electrolyte solvent mixt; carbonate cyclic electrolyte lithium **battery**; oxide lithium **nonaq battery**; inhibitor lithium **nonaq battery** ; trifluoromethanesulfonate lithium **nonaq battery**

IT **Batteries**, primary
(button-type, lithium alloy, with **nonaq**. electrolyte contg. lithium trifluoromethanesulfonate and cyclic carbonate)

IT 71849-42-8 71849-43-9, Lithium base, tin 72785-69-4 72785-91-2 72785-92-3 **75418-59-6** 77194-65-1, Calcium, lithium base 77194-67-3, Lithium base, strontium 77194-68-4, Barium, lithium base 77194-70-8 97838-40-9, Gallium, lithium base 97838-42-1
(**anodes**, **batteries** contg., electrolytes for)

IT 1313-13-9, Manganese dioxide, uses and miscellaneous 1313-27-5, Molybdenum oxide (MoO3), uses and miscellaneous 1314-62-1, Vanadium oxide (V2O5), uses and miscellaneous 1317-33-5, Molybdenum disulfide, uses and miscellaneous 1317-37-9, Iron sulfide (FeS) 1317-38-0, Copper oxide (CuO), uses and miscellaneous 11113-63-6, Graphite fluoride 11118-57-3, Chromium oxide 12039-13-3, Titanium disulfide
(**cathodes**, lithium alloy **batteries** contg.,

electrolytes for)
IT 78-40-0, Triethyl phosphate 110-18-9 126-73-8, Phosphoric acid tributyl ester, uses and miscellaneous 147-84-2, reactions 150-61-8 7790-69-4, Lithium nitrate 7803-65-8 127204-51-7
(corrosion inhibitors, electrolyte contg., for **nonaq.** lithium alloy **batteries**)
IT 96-48-0, .gamma.-Butyrolactone 96-49-1, 1,3-Dioxolan-2-one 108-32-7, Propylene carbonate 109-99-9, THF, uses and miscellaneous 110-71-4 126-33-0, Sulfolane 4437-85-8, Butylene carbonate
(electrolyte solvents contg., for lithium trifluoromethanesulfonate, in lithium alloy **batteries**)

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111:61014 **Battery** with nonsolution lithium alloy **anode** and **nonaqueous** electrolyte. Harris, Peter B.; Bennett, James; Lechiaro, Kathy M.; Morello, Peter F.; McDonald, Robert C. (Whittaker Technical Products, Inc., USA). U.S. US 4818645 A 19890404, 4 pp. (English). CODEN: USXXAM. APPLICATION: US 1987-126326 19871130.
AB The **battery** comprises an **anode** of Li alloyed with 0.5-20% Mo or 0.5-10% W, a **cathode** current collector, and a catholyte. Various Li alloy **batteries** with 0.9M LiAlCl4 in SOCl2 catholyte were prepd. and their performance was detd.
IT **121728-25-4**
(**anodes**, nonsoln., for **batteries** with thionyl chloride catholyte)
RN 121728-25-4 HCA
CN Lithium alloy, base, Li 60-95,Si 5-40 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Li	60 - 95	7439-93-2
Si	5 - 40	7440-21-3

IC ICM H01M004-40
ICS H01M006-14
NCL 429209000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST lithium alloy thionyl chloride **battery**
IT **Batteries**, primary
(lithium alloy-thionyl chloride)
IT **Anodes**
(**battery**, lithium alloy, nonsoln.)
IT 121728-23-2 121728-24-3 **121728-25-4** 121787-47-1
(**anodes**, nonsoln., for **batteries** with thionyl chloride catholyte)

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104:227731 Composite **anode** for secondary **nonaqueous**